University of Oregon – Oregon Institute of Marine Biology / Charleston, OR

Natural history, geographic distribution, status, and life-cycle of Olympia oysters (*Ostrea lurida*)

Project Title:
A collaborative approach to address reproduction, larval supplies, and settlement during recovery of native Olympia oysters

Location:
Coos Bay, Oregon

Goal:
Generate new science to support development of a conservation and recovery plan for Olympia oyster populations throughout Coos Bay

Partners:
Oregon Institute of Marine Biology; South Slough National Estuarine Research Reserve; Oregon State University; Oregon Sea Grant; Oregon Department of Fish and Wildlife

Timeline:
Nov 2011 to Sep 2013

Natural history of Olympia oysters:

Olympia oysters are small bivalves that inhabit the intertidal and shallow subtidal zones of estuaries, bays, and quiet-water areas along the Pacific coast. The oysters typically occur as individuals or multi-generational clusters attached to hard surfaces such as rock or cobble, but they can also occur unattached on mud. As filter-feeders, the oysters draw water currents into the shells and capture planktonic food particles along their gills. Populations can tolerate a wide range of environmental conditions and salinity values, although they cannot withstand fresh water. Adult oysters reach a maximum shell length of about 90 mm, but most individuals are considerably smaller (35-50 mm). It is estimated that Olympia oysters have a life-span of over 10 years.


Olympia oyster (*Ostrea lurida*)

Geographic distribution of Olympia oysters along the Pacific coast:

Olympia oysters are native along the Pacific coast of North America, and they are reported to occur from Gale Passage (British Columbia) to Bahia de San Quintin (Baja California). The northern limit is most likely determined by the inability of the oysters to withstand freezing temperatures in the winter, and the southern limit is determined by their poor capacity to tolerate warm temperatures in the summer months.

Distribution of *Ostrea lurida*

Status of Olympia oyster populations:

Region-wide decline of Olympia oysters has been attributed to many factors including overharvesting, excessive sedimentation, forest fires, tsunamis, pollution, dredging, urbanization of estuarine shorelines, non-indigenous species, and other stressors. Regional demise of the oysters has prompted widespread recognition as a special status species in British Columbia, Washington, Oregon, and California. They have recently been afforded a high priority for restoration and recovery efforts throughout their biogeographic range. Substantial populations of Olympia oysters still occur in a only a few isolated locations.

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Stakeholder Involvement:

Stakeholders participate as members of the Olympia Oyster Recovery Advisory Committee. Input and issues raised by the stakeholder committee are used to help direct and guide the scientific work completed by graduate students and faculty at the Oregon Institute of Marine Biology.

Support:

Financial support for the project is provided by a grant from the NOAA-NERRS Science Collaborative.

Learn More:

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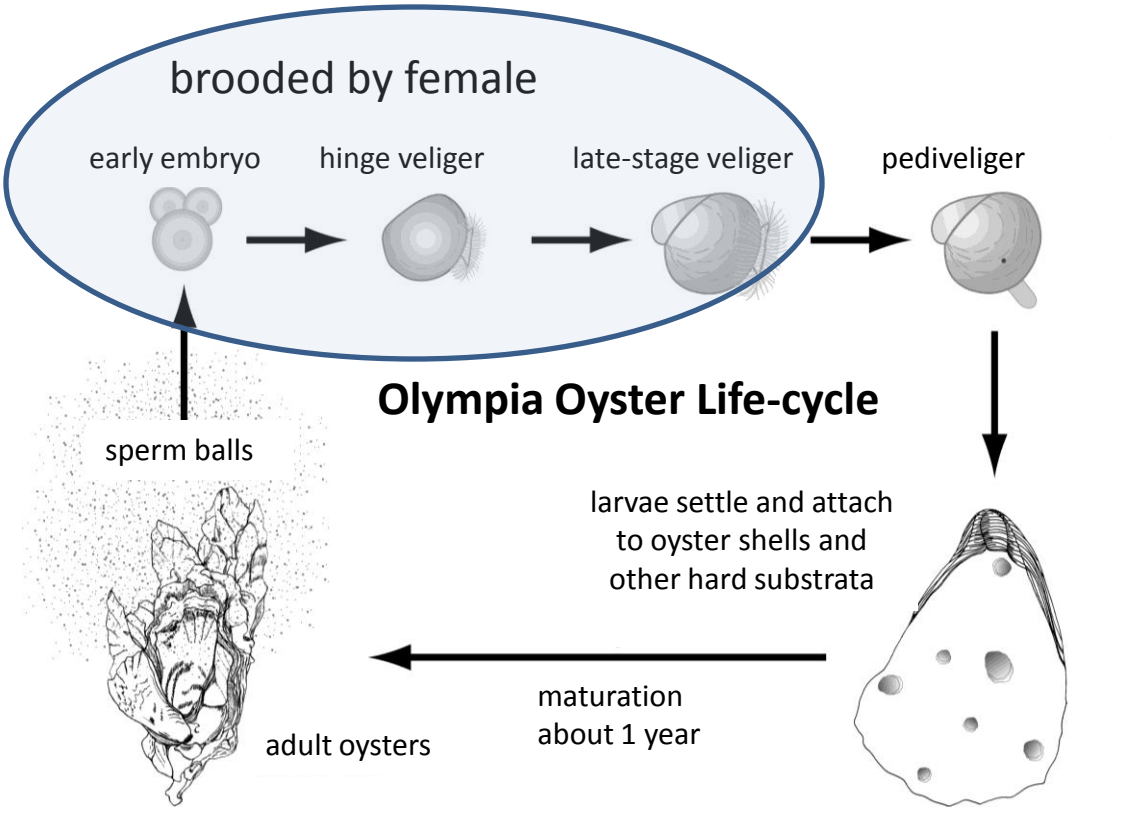
Life-cycle of the Olympia oyster:



Predators of Olympia oysters:

Olympia oysters are prized as a gourmet food item by humans. In addition, the small oysters are preyed upon by several species of crabs, gastropods, sea stars, and shorebirds. In particular, red rock crabs (*Cancer productus*) prey upon adult oysters in the shallow subtidal zone, and shore crabs (*Hemigrapsus oregonensis*) have been observed to consume juveniles in intertidal areas. The non-native European green crab (*Carcinus maenas*) is also known to be a significant predator in the intertidal zone.


Red rock crab (*Cancer productus*)